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99:2 9128/25

A2: D21 E23 F06 G02  
(115)

BADI 97.11.06

A1: C1, 1-D1, 1-E5, 1-E7, 1-E8, 9-A2A, D68-B, F06  
A2E, 6-D3, 6-D13, 7-A2E, 7-D2, F03, F17, G02, A2B, 2, A5

BASI AG

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B = a mesogenic group

Y = Y' and Y'' = CO-O, O-CO-O or O-CO-O

the q (AY') units and the p (BY'') units can be in any order  
the q (AY') groups can be the same or different and the p (BY'') groups can be the same or different

Z' and Z'' = QW

Q = a bond or an optionally substituted alkylene or arylene spacer

W = a crosslinkable heterocyclic group

97 11.06.9 DE 1029128 99:05 12 (108) 63 20, 63 13, 63 50,  
63 62, 64 22, C19D 17 00, C19K 19 38, C19D 16 70, C19B 67 20,  
C18G 63 68, 63 54, 63 20

Crosslinkable cholesteric ester or carbonate oligomers - for  
production of cholesteric polymer networks and pigments

C 99:085652

Addit. Data: SCHUCHMAYER P, KRICHENDORF H R  
KRAWINKEL I

NOVELTY

Cholesteric oligomers are new

DETAILED DESCRIPTION

The cholesteric oligomers are of formula (I):  
(Z')<sub>n</sub>Y'CAAY'qBY''(Z'')<sub>p</sub> (II)

where

n = 0-12

q = 0-2

p = 1-20

A = a chiral group

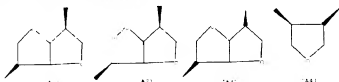
INDEPENDENT CLAIMS are made for cholesteric polymer networks  
obtainable by heating the cholesteric oligomers, preferably at 250-  
300 °C, and mono- or multilayer pigments comprising the cholesteric  
oligomers or the cholesteric polymer networks

DEFINITIONS

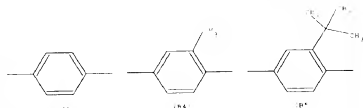
Preferred Definitions:

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A = groups of formula A<sub>1</sub>-A<sub>4</sub>



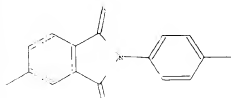
B = groups of formula B<sub>1</sub>-B<sub>3</sub>



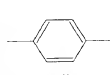
or (CH<sub>2</sub>)<sub>m</sub> where m = 4-12

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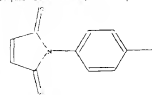


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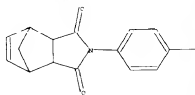


(B3)

$Z$  [i.e.  $Z'$  and  $Z''$ ] = groups of formula  $Z'$  or  $Z''$



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$q = 0, 1, 4; p = 2, n = 1$

#### USE

The cholesteric oligomers can be used as coating materials or for producing pigments. The cholesteric polymer networks or pigments can be used in the automobile and automobile accessories sector, in the electronic data processing, leisure, sports and games sectors, as optical components (e.g. polarizers or filters), in the fields of

cosmetics, textiles, leather, jewelry and gifts, in writing utensils or in spectacle frames, in the building and household sectors, in printed products of all kinds, for production of paints and lacquers, for anti-counterfeiting, for coating of utensils, and for lacquering of automobiles.

#### ADVANTAGE

The cholesteric oligomers can be crosslinked in the anisotropic phase, especially thermally, without losing their cholesteric effect.

#### ORGANIC CHEMISTRY

Preferred Preparation: Claimed processes comprise (a) reacting  $B_1(COCl)_2$  with  $Ac(OH)_2$ ,  $ZOH$  and optionally  $Bi(OH)_2$  in an inert solvent, especially 1-chloronaphthalene, and (b) reacting  $Ac(OH)_2$ ,  $Bi(OH)_2$  and  $ZOH$  with phosgene or especially diphosgene.

#### EXAMPLE

An oligomer was prepared by reacting 40 mmoles  $ClCO-B_1-COCl$  and 15 mmoles  $ClCO-B_2-COCl$  ( $m=6$ ) with 10 mmoles  $Z_1-OH$ , 45 mmoles  $HO-B_3-OH$  and 5 mmoles  $HO-A_1-OH$  (JGT).

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